CITY OF AMERICAN FALLS (PWS 6390001)
SOURCE WATER ASSESSMENT FINAL REPORT

November 6, 2001

State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for the City of American Falls, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of American Falls (Public Water System Number 6390001) drinking water system consists of five ground water sources: Well #1, Well #3, Well #4, Well #5, and Well #6. The wells are located within the City of American Falls and pump directly into the distribution system. There is also the Sunbeam artesian source that consists of several artesian wells located off Sunbeam Road approximately five miles southeast of American Falls. Water from the Sunbeam source is gravity fed to a storage reservoir. This assessment will focus on the drinking water wells. The Sunbeam artesian source has not been delineated and will be appended to this document at a later date.

The potential contaminant sources located within the delineated capture zones include aboveground storage tanks (ASTs), underground storage tanks (USTs), and leaking underground storage tanks (LUSTs). There were also sites regulated under the Resource Conservation Recovery Act (RCRA), and Superfund Amendments and Reauthorization Act Tier II Facilities (SARA). Other sources identified that may contribute to the overall vulnerability of the water source were businesses within the delineated areas that may be considered potential contaminants sources. A complete list of potential contaminant sources is provided with this assessment.

For the assessment, a review of laboratory tests for the American Falls system was conducted using the Idaho Drinking Water Information Management System (DWIMS) and hardcopy laboratory results. Between May 1997 and August 2001, total coliform bacteria were detected at various locations within the distribution system. All samples re-tested were absent of total coliform bacterial. No volatile organic chemicals (VOC) or synthetic organic chemicals (SOC) have been detected in the water samples taken at the American Falls wells. However, there have been inorganic chemicals (IOC) identified throughout the system's history. Well #1 detected antimony, barium, cadmium, chromium, lead, fluoride, mercury, nitrate, selenium, sulfate, sodium, and thallium between July 1984 and August 2001. These detects were below each contaminant's maximum contaminant level (MCL) with the exception of thallium detected at 0.003 mg/l (MCL is 0.002 mg/l) in June 1995. Well #3 detected arsenic, barium, fluoride, nitrate, selenium, and sodium between March 1988 and August 2001. For Well #4, there were detections of barium, fluoride, nitrate, and sodium between August 1991 and August 2001. Well #5 detected barium, cyanide, fluoride, nitrate, and sodium between August 1991 and August 2001, and Well #6 detected barium, chromium, fluoride, nitrate, and sodium between April 1987 and August 2001. For Well #3, Well #4, Well #5, and Well #6, none of the samples taken have met or exceeded the MCL for each chemical tested.

The nitrate history (between the years of 1984 and 2001) for the American Falls wells indicate that all samples taken were below the MCL of 10.0 mg/l. Nitrate concentrations from Well #1 ranged from 1.9 mg/l to 5.9 mg/l with peak concentrations in December 1996 and July 2000. Six of the thirteen samples taken at Well #1 were at or above the active level (greater than half the MCL). Nitrate results for Well #3 ranged from 0.98 mg/l to 2.00 mg/l. Well #4 nitrate concentrations ranged from 1.24 mg/l to 2.8 mg/l. The results for Well #5 ranged from 0.78 mg/l to 3.3 mg/l with the peak result taken in June 1997. Well #6 nitrate values ranged from 2.2 mg/l to 4.06 mg/l, with a peak concentration taken in July 1995. Since July 1995, there has been a decrease of nitrate found in Well #6.

A Sanitary Survey was conducted by the Idaho Department of Environmental Quality (DEQ) in April 2000 for the City of American Falls. The survey provides an overview of the public water system with improvements for the system. On May 2, 2001, the City of American Falls responded to the Sanitary Survey outlining completed system improvements, and improvements that the city is trying to resolve. Improvements to be made include installing a casing vent and discharge to waste capability for Well #1.

The susceptibility ratings for the American Falls system were based upon available information relating to system construction, soil drainage characteristics, agricultural land use, and potential contaminant sources identified within each well's zones of contribution. The final susceptibility ranking for Well #1 was high for IOCs, VOCs, SOCs, and microbial contaminants. Well #3, Well #4, and Well #5 were rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. Well #6 was rated high for IOCs, VOCs, SOCs and moderate for microbial contaminants. The Sunbeam artesian source has not been delineated therefore a final susceptibility will later be appended to this report.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For source water protection, the City of American Falls should continue efforts in keeping their water system in compliance and free of contaminants that may affect the drinking water. At the present time, the nitrate levels in the drinking water wells are below the MCL. If concentrations of nitrate or other chemicals tested approach or exceed the MCL, the system should take appropriate measures to treat the water source. Treatments, such as reverse osmosis for IOCs, and disinfectant and filtration for microbials, should be investigated to remedy these problems. Any new sources that could be considered potential contaminant sources in the well's zones of contribution should also be investigated and monitored to prevent future contamination. Partnerships with state and local agencies, industrial and agricultural groups should be established and are critical to success. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the Power County Soil Conservation District, and the Natural Resources Conservation Service.

SOURCE WATER ASSESSMENT FOR CITY OF AMERICAN FALLS
POWER COUNTY, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

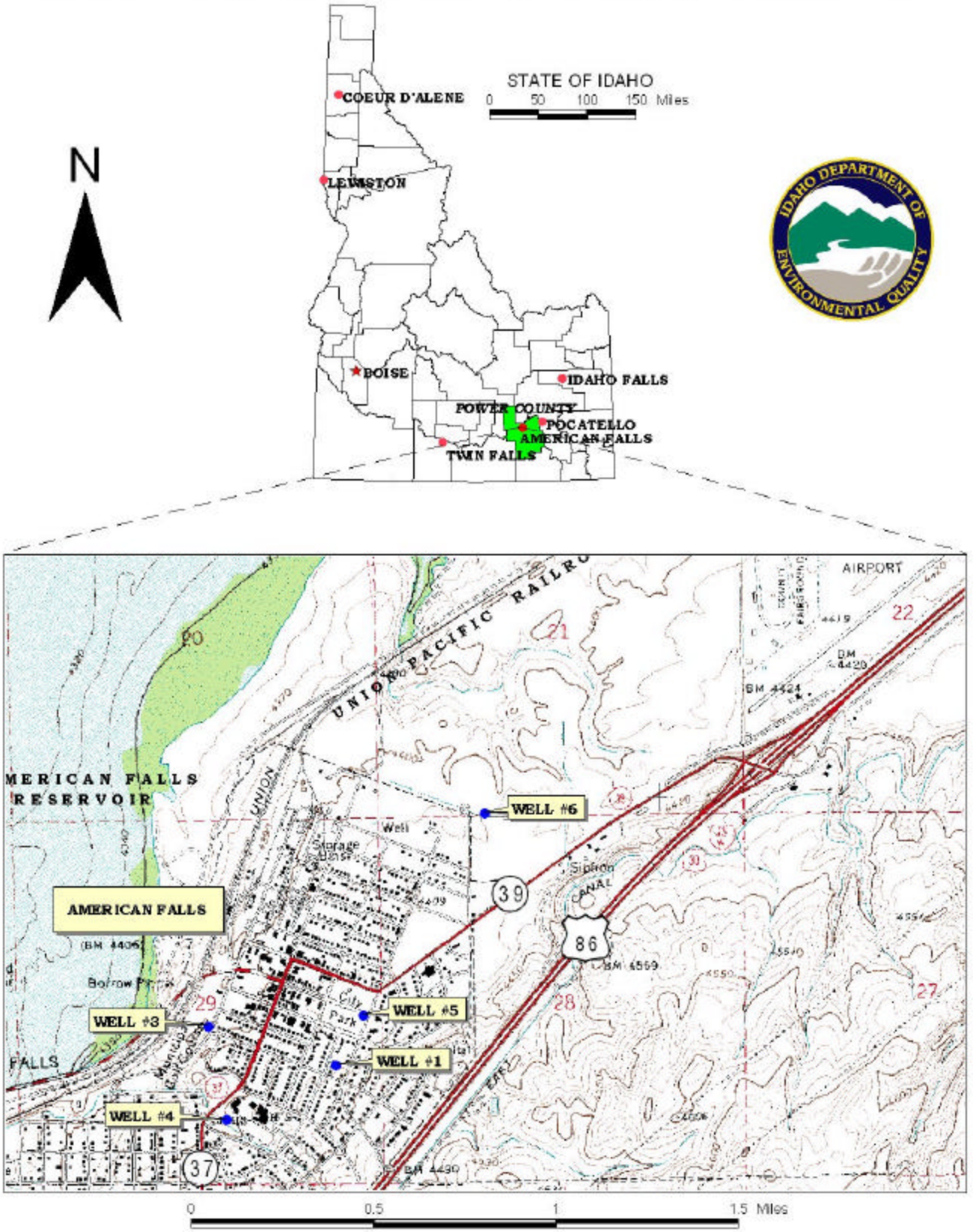
The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The DEQ recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of American Falls is a community public drinking water system approximately 25 miles west of Pocatello near Interstate 86 (Figure 1). This system serves approximately 3800 persons. The system consists of five wells (Well #1, Well #3, Well #4, Well #5, and Well #6) located throughout the city and an artesian source (Sunbeam) located off of Sunbeam Road approximately five miles southeast of American Falls. At this time, there are no primary water quality issues associated with the system.

FIGURE 1. Geographic Location of the City of American Falls



According to DWIMS and hardcopy laboratory results, no volatile organic chemicals (VOCs) or synthetic organic chemicals (SOCs) were detected in the water samples taken from the public drinking water wells. Inorganic chemicals (IOCs) have been detected in the wells and are described below:

Well #1 is located in a residential alley near Bannock, Falls, Polk, and Roosevelt Streets. The inorganic chemicals antimony, barium, cadmium, chromium, lead, fluoride, mercury, nitrate, selenium, sulfate, sodium, and thallium have been detected at the well source between July 1984 and August 2001. These detects were below each contaminant's MCL with the exception of thallium detected at 0.003 mg/l (MCL is 0.002 mg/l) in June 1995. Nitrate results ranged from 1.9 mg/l to 5.9 mg/l, with peak concentrations in December 1996 and July 2000. Although the nitrate history for Well #1 shows the results below the MCL of 10.0 mg/l, six of the thirteen samples taken were at or above the active level (greater than half the MCL).

Well #3 is located at the intersection of Oregon Trail Street and Polk Street near the golf course. Between March 1988 and August 2001, arsenic, barium, fluoride, nitrate, selenium, and sodium were detected at the well source. However, the reported concentrations of these chemicals were below their MCL. Nitrate results ranged from 0.98 mg/l to 2.00 mg/l with the peak concentration in September 1998.

Well #4 is located near the American Falls High School at the intersection of Fort Hall Street and West Park Street. The water samples taken between August 1991 and August 2001 detected barium, fluoride, nitrate, and sodium, all of which were below the MCL for each chemical. The nitrate concentrations for Well #4 ranged from 1.24 mg/l to 2.8 mg/l, with a peak result taken in September 1998.

Well #5 is located at the intersection of Bannock and Idaho Streets in the City Park. The water samples taken between August 1991 and August 2001 detected barium, cyanide, fluoride, nitrate, and sodium, all of which were below the MCL for each chemical. Nitrate results ranged from 0.78 mg/l to 3.3 mg/l with a peak result of 3.3 mg/l taken in June 1997.

Well #6 is located at the intersection of Hillcrest Street and Snowflake Street. The water samples taken between April 1987 and August 2001 has had detects of barium, chromium, fluoride, nitrate, and sodium with no results meeting or exceeding the MCL for each chemical. Nitrate results ranged from 2.2 mg/l to 4.06 mg/l, with a peak nitrate concentration taken in July 1995. Since 1995, there has been a decrease of nitrate in this well.

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a pumping well) for water in the aquifer. Washington Group International (WGI) was contracted by DEQ to define the public water system's zones of contribution. WGI used a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Rockland Valley Hydrologic Province in the vicinity of the City of American Falls. The computer model used site-specific data, assimilated by Washington Group International from a variety of sources including the City of American Falls well logs, operator records, and hydrogeologic reports summarized below.

The City of American Falls is located in the northeast corner of the Rockland Valley Hydrologic Province. The Rockland Valley Hydrologic Province is approximately 221 square miles of the southeastern Idaho Snake River drainage and is within the more extensive Rockland Basin. The Rockland Basin was formed by basin-and-range extension with the long axis trending in a north-south direction. The elevations within the larger Rockland basin range from 4,200 feet above mean sea level (msl) at the northern end where Rock Creek converges with the Snake River and 8,700 feet msl at Deep Creek Peak found at the valley's eastern border in the Deep Creek Mountains. The Sublet Range bounds the valley to the west. The mountains bordering the basin are predominantly marine deposits that have undergone complex faulting. Sedimentary rocks eroded from the bounding mountains constitute the valley fill within the basin (Washington Group International, Inc., 2001, p. 4-5).

The American Falls area is hydrologically bound by the Deep Creek and Bannock Mountain Ranges, the American Falls Reservoir, the Snake River, and Portneuf River. The ground water movement in this area is controlled by local geology. Impermeable units of silt, tuff, and fine-grained sand beneath the American Falls Reservoir impede ground water movement. The aquifer within the American Falls area consists of unconsolidated alluvium (deposits made by streams) with some sandstone. The direction of ground water flow moves west into American Falls Reservoir above the City of American Falls. Beyond the reservoir, the ground water moves southwest and discharges as seeps and springs (Washington Group International, Inc., 2001, p. 5).

Bordering the Rockland Basin, the main source of recharge is precipitation at the higher elevations. Closer to the American Falls area there is recharge by precipitation onto tuff outcrops that make up the hills to the southeast of American Falls (Washington Group International, Inc., 2001, p. 5). For the Rockland Basin, the average accumulated precipitation is 17.3 inches per year. The average water-table gradient for the Rockland valley is approximately 25 feet per mile, and the slope is toward the mouth of Rock Creek (Washington Group International, Inc., 2001, p. 4).

The zones of contribution for the City of American Falls wells vary in shape, but appear to constrict near the wellhead. Refer to figures for the well locations and delineated boundaries. The actual data used by Washington Group International in determining the hydrogeological assessment and the areas delineated for the source water assessment is available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used by the facility. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the American Falls public water system was conducted in the summer of 2001. The first phase involved identifying and documenting potential contaminant sources within American Falls source water assessment area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. American Falls and DEQ then conducted the second phase or enhanced inventory to validate the sources identified in phase one and to identify additional potential sources of contamination in the delineated source water assessment area. At the time of the enhanced inventory additional potential contaminant sources were found within the delineated source water area. Maps with well locations, delineated areas and potential contaminant sources are provided with this report (Figures 2-6). Each potential contaminant source has been given a unique number that references tabular information associated with each public water well (Tables 1-5).

Table 1. City of American Falls Well #1 Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
1	LUST[3] site	0-3	Database Inventory	VOC, SOC
2	LUST site	0-3	Database Inventory	VOC, SOC
3	LUST site	0-3	Database Inventory	VOC, SOC
4	LUST site	0-3	Database Inventory	VOC, SOC
5	UST[4] site	0-3	Database Inventory	VOC, SOC
6	UST site	0-3	Database Inventory	VOC, SOC
7	UST site	0-3	Database Inventory	VOC, SOC
8	UST site	0-3	Database Inventory	VOC, SOC
9	UST site	0-3	Database Inventory	VOC, SOC
10	Auto Repair & Services	0-3	Database Inventory	IOC, VOC, SOC
11	Golf Course	0-3	Database Inventory	IOC, VOC, SOC
12	Rental Service	0-3	Database Inventory	VOC, SOC
13	Machine Shop	0-3	Database Inventory	IOC, VOC, SOC
14	Funeral Home	0-3	Database Inventory	IOC, SOC
15	Electric Motors/Repair	0-3	Database Inventory	IOC, VOC
16	Grain Dealer	0-3	Database Inventory	IOC
17	Auto Repair & Services	0-3	Database Inventory	IOC, VOC, SOC
18	Auto Body Shop	0-3	Database Inventory	IOC, VOC, SOC
19	Hardware/Retail	0-3	Database Inventory	VOC, SOC
20	Newspaper	0-3	Database Inventory	VOC
21	Wholesale Fertilizer	0-3	Database Inventory	IOC, SOC, Microbes
22	Soil Testing	0-3	Database Inventory	IOC, VOC, SOC
23	RCRIS[5] Site	0-3	Database Inventory	IOC, VOC, SOC
24	RCRIS Site	0-3	Database Inventory	IOC, VOC, SOC
25	SARA[6]	0-3	Database Inventory	VOC, SOC
26	SARA	0-3	Database Inventory	IOC, VOC, SOC, Microbes
27	SARA	0-3	Database Inventory	IOC, VOC, SOC, Microbes
28	SARA	0-3	Database Inventory	VOC, SOC
29	AST[7]	0-3	Database Inventory	VOC, SOC
30	AST	0-3	Database Inventory	VOC, SOC
	Interstate 86	0-3	Map Inventory	IOC, VOC, SOC, Microbes
31	UST site	3-6	Database Inventory	VOC, SOC
32	UST site	3-6	Database Inventory	VOC, SOC
33	UST site	3-6	Database Inventory	VOC, SOC
34	Motorcycle Dealer	3-6	Database Inventory	VOC, SOC
35	SARA	3-6	Database Inventory	VOC, SOC
	Interstate 86	3-6	Map Inventory	IOC, VOC, SOC, Microbes

[1]TOT = time-of-travel (in years) for potential contaminant to reach the wellhead
[2]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[3]LUST = leaking underground storage tank
[4]UST = leaking underground storage tank
[5]RCRIS = Site regulated under Resource Conservation Recovery Act (RCRA)
[6]SARA = Superfund Amendments and Reauthorization Act Tier II Facilities
[7]AST = above ground storage tank

Table 2. City of American Falls Well #3 Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
1	LUST[3] site	0-3	Database Inventory	VOC, SOC
2	LUST site	0-3	Database Inventory	VOC, SOC
3	LUST site	0-3	Database Inventory	VOC, SOC
4	UST[4] site	0-3	Database Inventory	VOC, SOC
5	UST site	0-3	Database Inventory	VOC, SOC
6	UST site	0-3	Database Inventory	VOC, SOC
7	Golf Course	0-3	Database Inventory	IOC, VOC, SOC
8	Machine Shop	0-3	Database Inventory	IOC, VOC, SOC
9	Funeral Home	0-3	Database Inventory	IOC, SOC
10	Electric Motors/Repair	0-3	Database Inventory	IOC, VOC
11	Auto Repair & Services	0-3	Database Inventory	IOC, VOC, SOC
12	Soil Testing	0-3	Database Inventory	IOC, VOC, SOC
13	RCRIS[5] Site	0-3	Database Inventory	IOC, VOC, SOC
14	RCRIS Site	0-3	Database Inventory	IOC, VOC, SOC
15	SARA[6]	0-3	Database Inventory	VOC, SOC
	Interstate 86	0-3	Map Inventory	IOC, VOC, SOC, Microbes
	Interstate 86	3-6	Map Inventory	IOC, VOC, SOC, Microbes

[1]TOT = time-of-travel (in years) for potential contaminant to reach the wellhead
[2]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[3]LUST = leaking underground storage tank
[4]UST = leaking underground storage tank
[5]RCRIS = Site regulated under Resource Conservation Recovery Act (RCRA)
[6]SARA = Superfund Amendments and Reauthorization Act Tier II Facilities

Table 3. City of American Falls Well #4 Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
1	LUST[3] site	0-3	Database Inventory	VOC, SOC
2	UST[4] site	0-3	Database Inventory	VOC, SOC
3	UST site	0-3	Database Inventory	VOC, SOC
4	UST site	0-3	Database Inventory	VOC, SOC
5	UST site	0-3	Database Inventory	VOC, SOC
6	SARA[5]	0-3	Database Inventory	VOC, SOC
	Interstate 86	0-3	Map Inventory	IOC, VOC, SOC, Microbes
	Highway 37	0-3	Map Inventory	IOC, VOC, SOC, Microbes
7	Motorcycle Dealer	3-6	Database Inventory	VOC, SOC

[1]TOT = time-of-travel (in years) for potential contaminant to reach the wellhead
[2]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[3]LUST = leaking underground storage tank
[4]UST = leaking underground storage tank
[5]SARA = Superfund Amendments and Reauthorization Act Tier II Facilities

Table 4. City of American Falls Well #5 Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
1	LUST[3] site	0-3	Database Inventory	VOC, SOC
2	LUST site	0-3	Database Inventory	VOC, SOC
3	LUST site	0-3	Database Inventory	VOC, SOC
4	LUST site	0-3	Database Inventory	VOC, SOC
5	LUST site	0-3	Database Inventory	VOC, SOC
6	UST[4] site	0-3	Database Inventory	VOC, SOC
7	UST site	0-3	Database Inventory	VOC, SOC
8	UST site	0-3	Database Inventory	VOC, SOC
9	UST site	0-3	Database Inventory	VOC, SOC
10	UST site	0-3	Database Inventory	VOC, SOC
11	UST site	0-3	Database Inventory	VOC, SOC
12	UST site	0-3	Database Inventory	VOC, SOC
13	UST site	0-3	Database Inventory	VOC, SOC
14	UST site	0-3	Database Inventory	VOC, SOC
15	UST site	0-3	Database Inventory	VOC, SOC
16	UST site	0-3	Database Inventory	VOC, SOC
17	Auto Repair & Services	0-3	Database Inventory	IOC, VOC, SOC
18	Sugar Refiners/AST	0-3	Enhanced Inventory	VOC, SOC
19	Golf Course	0-3	Database Inventory	IOC, VOC, SOC
20	Rental Services	0-3	Database Inventory	VOC, SOC
21	Machine Shop	0-3	Database Inventory	IOC, VOC, SOC
22	Engines-Gasoline	0-3	Database Inventory	VOC, SOC
23	Farm Equipment	0-3	Database Inventory	VOC, SOC
24	Auto Parts & Supplies	0-3	Database Inventory	VOC, SOC
25	Trucking-Heavy Hauling	0-3	Database Inventory	VOC, SOC
26	Funeral Directors	0-3	Database Inventory	IOC, SOC
27	Electric Motor Repair	0-3	Database Inventory	IOC, VOC
28	Cleaners	0-3	Database Inventory	SOC
29	Grain Dealer	0-3	Database Inventory	IOC
30	Hospital	0-3	Database Inventory	IOC, SOC, Microbes
31	Auto Repair & Services	0-3	Database Inventory	IOC, VOC, SOC
32	Delivery Services	0-3	Database Inventory	VOC, SOC
33	Auto Body Shop	0-3	Database Inventory	IOC, VOC, SOC
34	Hardware-Retail	0-3	Database Inventory	VOC, SOC
35	Auto Parts & Supplies	0-3	Database Inventory	VOC, SOC
36	Service Station	0-3	Database Inventory	VOC, SOC
37	Newspaper	0-3	Database Inventory	VOC
38	Welding	0-3	Database Inventory	VOC
39	Fertilizer Wholesale	0-3	Database Inventory	IOC
40	Gasoline Wholesale	0-3	Database Inventory	VOC, SOC
41	Fertilizer Wholesale	0-3	Database Inventory	IOC, SOC, Microbes
42	Soil Testing	0-3	Database Inventory	IOC, VOC, SOC
43	Car Wash/Polish	0-3	Database Inventory	VOC, SOC
44	Farm Equipment & Repair	0-3	Database Inventory	VOC, SOC
45	Auto Parts & Supplies	0-3	Database Inventory	VOC, SOC
46	Auto Dealer	0-3	Database Inventory	VOC, SOC
47	RCRIS[5]	0-3	Database Inventory	IOC, VOC, SOC

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
48	SARA[6]	0-3	Database Inventory	VOC, SOC
49	SARA	0-3	Database Inventory	IOC, VOC, SOC, Microbes
50	SARA	0-3	Database Inventory	IOC, SOC
51	SARA	0-3	Database Inventory	IOC, VOC, SOC, Microbes
52	SARA	0-3	Database Inventory	VOC, SOC
53	AST[7]	0-3	Database Inventory	VOC, SOC
54	AST	0-3	Database Inventory	VOC, SOC
55	AST	0-3	Database Inventory	VOC, SOC
56	Auto Maintenance	0-3	Enhanced Inventory	VOC, SOC
57	AST	0-3	Enhanced Inventory	VOC, SOC
	Interstate 86	0-3	Map Inventory	IOC, VOC, SOC, Microbes
58	LUST	3-6	Database Inventory	VOC, SOC
59	UST	3-6	Database Inventory	VOC, SOC
61	UST	3-6	Database Inventory	VOC, SOC
62	Veterinarians	3-6	Database Inventory	IOC, SOC, Microbes
63	Auto Repair & Service	3-6	Database Inventory	VOC, SOC
64	Fertilizer Mixing	3-6	Database Inventory	IOC
65	Tire Dealer Retail	3-6	Database Inventory	VOC, SOC
66	Tire Dealer Retail	3-6	Database Inventory	VOC, SOC
67	General Contractor	3-6	Database Inventory	IOC, VOC, SOC
68	Auto Dealer-New Cars	3-6	Database Inventory	VOC, SOC
69	Boat Dealer	3-6	Database Inventory	VOC, SOC
70	Wrecker Service	3-6	Database Inventory	VOC, SOC
71	RCRIS Site	3-6	Database Inventory	VOC, SOC
72	SARA	3-6	Database Inventory	IOC, SOC
73	UST	6-10	Database Inventory	VOC, SOC
74	UST	6-10	Database Inventory	VOC, SOC
75	Air Services	6-10	Enhanced Inventory	VOC, SOC

[1]TOT = time-of-travel (in years) for potential contaminant to reach the wellhead
[2]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[3]LUST = leaking underground storage tank
[4]UST = leaking underground storage tank
[5]RCRIS = Site regulated under Resource Conservation Recovery Act (RCRA)
[6]SARA = Superfund Amendments and Reauthorization Act Tier II Facilities
[7]AST = above ground storage tank

Table 5. City of American Falls Well #6 Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
1	LUST[3] Site	0-3	Database Inventory	VOC, SOC
2	UST[4] Site	0-3	Database Inventory	VOC, SOC
3	UST Site	0-3	Database Inventory	VOC, SOC
4	UST Site	0-3	Database Inventory	VOC, SOC
5	UST Site	0-3	Database Inventory	VOC, SOC
6	UST Site	0-3	Database Inventory	VOC, SOC
7	Veterinarians	0-3	Database Inventory	IOC, SOC, Microbials
8	Auto Repair & Service	0-3	Database Inventory	VOC, SOC
9	Tire Dealers Retail	0-3	Database Inventory	VOC, SOC
10	Tire Dealers Retail	0-3	Database Inventory	VOC, SOC
11	General Contractors	0-3	Database Inventory	IOC, VOC, SOC
12	Auto Dealers-New Cars	0-3	Database Inventory	VOC, SOC
13	Boat Dealers	0-3	Database Inventory	VOC, SOC
14	Wrecker Service	0-3	Database Inventory	VOC, SOC
15	RCRIS[5] Site	0-3	Database Inventory	VOC, SOC
	Highway 37	0-3	Map Inventory	IOC, VOC, SOC, Microbials
	Interstate 86	0-3	Map Inventory	IOC, VOC, SOC, Microbials
16	Air Service	3-6	Enhanced Inventory	VOC, SOC
	Interstate 86	3-6	Map Inventory	IOC, VOC, SOC, Microbials
17	UST Site	6-10	Database Inventory	VOC, SOC
	Interstate 86	6-10	Map Inventory	IOC, VOC, SOC, Microbials

[1]TOT = time-of-travel (in years) for potential contaminant to reach the wellhead
[2]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[3]LUST = leaking underground storage tank
[4]UST = leaking underground storage tank
[5]RCRIS = Site regulated under Resource Conservation Recovery Act (RCRA)

Section 3. Susceptibility Analyses

The susceptibility of the wells to contamination was ranked as high, moderate, or low risk according to the following considerations hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors. These factors are surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

The hydrologic sensitivity for Well #3 and Well #4 was rated moderate. High ratings were given to Well #1, Well #5, and Well #6 (Table 7). All wells reside in soils that have moderate to well draining capabilities. There was no well log available for Well #1 to evaluate the vadose zone characteristics. For Wells #3, Well #4, Well#5 and Well #6, the vadose zone composition consists of mostly sandstone, with sand, sandy-clay, clay, and minor amounts of gravel and cinder (fine-grained volcanic ash). The first depth to ground water for all American Falls wells is less than 300 feet from the surface. In addition, Well #3 and Well #4 have at least 50 feet cumulative thickness of low permeability material that help to reduce the downward movement of contaminants.

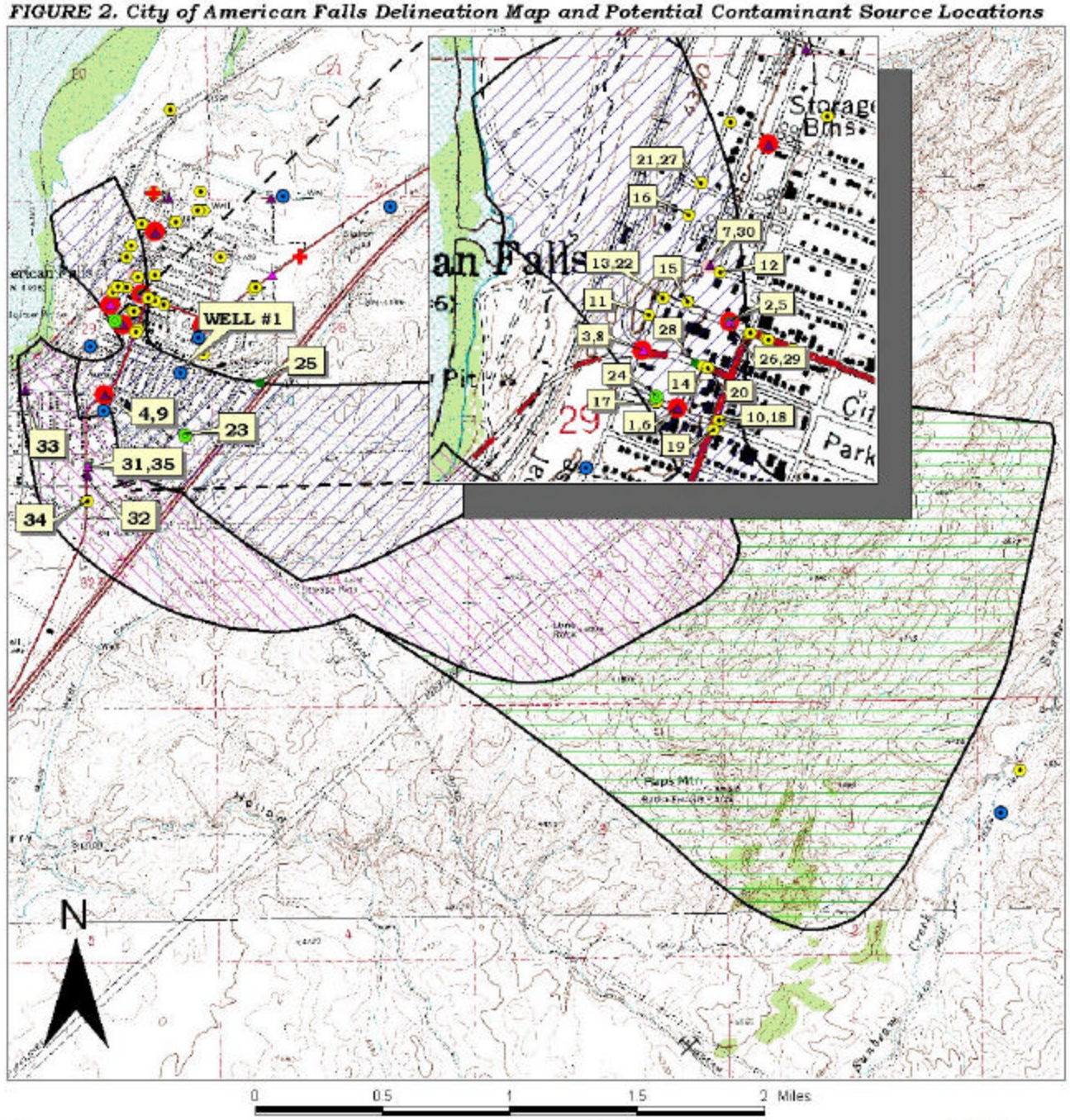
Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system that can better protect the water. If the casing and annular seal both extend into a low permeability unit then the possibility of cross contamination from other aquifer layers is reduced and the system construction score goes down. If the highest production interval is greater than 100 feet below the water table, then the system is considered to have better buffering capacity. When information was adequate, a determination was made as to whether the casing and annular seals extend into low permeability units and whether current public water system (PWS) construction standards are met.

The system construction scores for Well #1, Well #3, Well # 4, Well #5, and Well #6 were moderate (Table 7). Well log information was available for all wells with the exception of Well #1. The well logs and Sanitary Survey provide detailed information to determine the system construction rating for each public water source.

The Idaho Department of Water Resources (IDWR) Well Construction Standards Rules (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the Recommended Standards for Water Works (1997) during construction. Under current standards, all PWS wells are required to have a 50-foot buffer around the wellhead. These standards are used to rate the system construction for the well by evaluating items such as condition of wellhead and surface seal, whether the casing and annular space is within consolidated material or 18 feet below the surface, the thickness of the casing, etc. If all criteria are not met, the public water source does not meet the IDWR Well Construction Standards. The American Falls Well #5 met all standards. For Well #1 and Well #4 there was insufficient information available. The casing thickness for Well #3 and Well #6 was less than the recommended IDWR standards for a public water system (PWS) of 0.375 inches for 12-inch or greater diameter casing as listed in the Recommended Standards for Water Works (1997). A thicker casing for a public water source may prolong the life of the well. The highest water production zones for Well #3, Well #5 and Well #6 were 100 feet below static water level. Water drawn from deeper levels of the aquifer can provide a buffer from contaminants. The casing on all wells does not extend into low permeable units thus increasing each well's susceptibility to laterally migrating contamination. The wellheads and surface seals are properly maintained and do not fall within a 100-year floodplain. Refer to Table 6 for a summary the City of American Falls well construction information.

FIGURE 2. City of American Falls Delineation Map and Potential Contaminant Source Locations



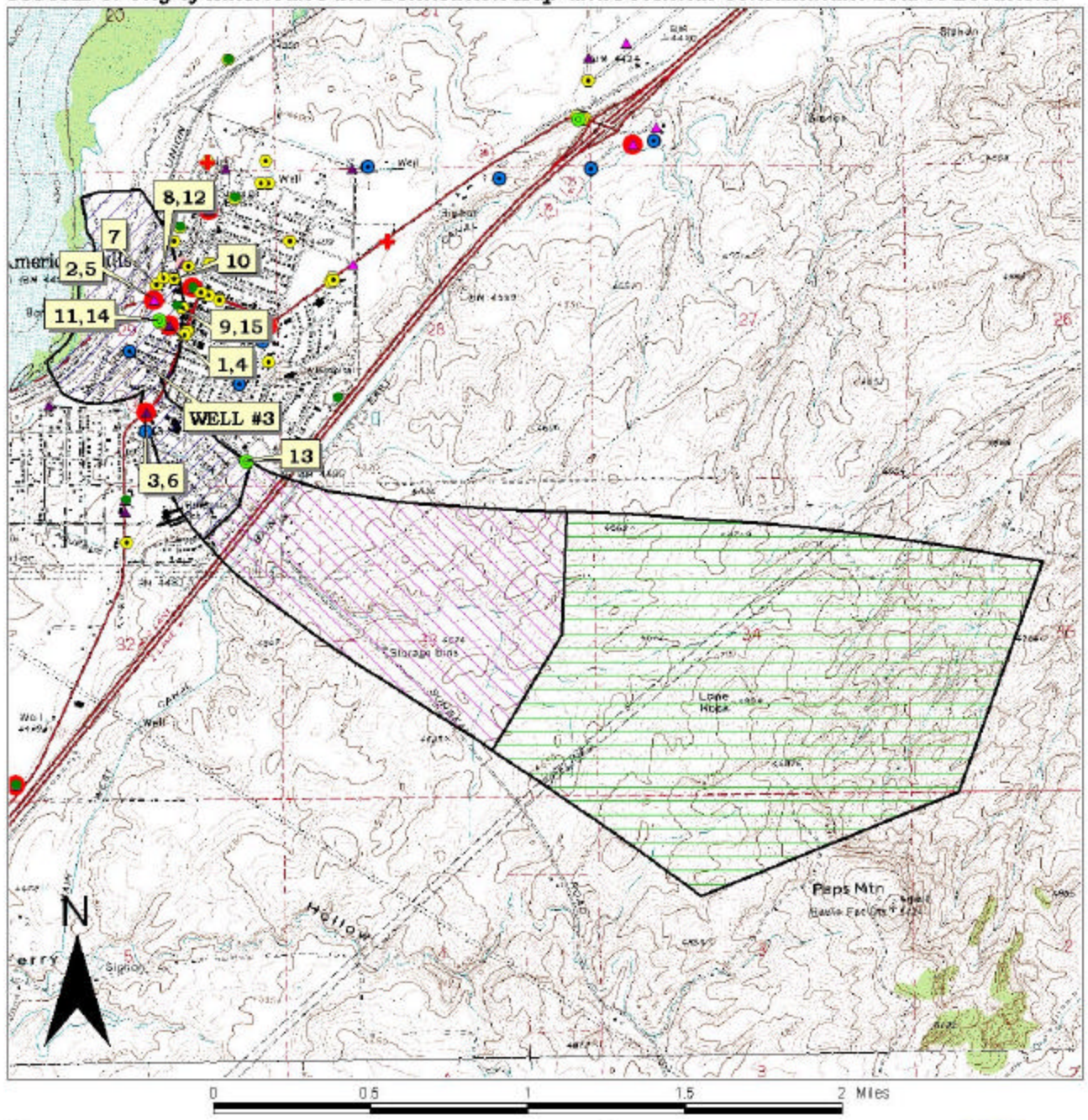
LEGEND

Time of Travel Zones
- 1B (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RCRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App.Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 6390001
WELL #1

FIGURE 3. City of American Falls Delineation Map and Potential Contaminant Source Locations



IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 6390001
WELL #3

Table 6. Well Construction Summary Information

Well	Depth (feet)	Casing Diameter (inch)	Casing Thickness (inch)	Casing Depth (feet)	Water Table Depth (feet)	Screened Interval (feet)	Surface Seal Depth (feet)	Year Drilled	IDWR Standards Met?
1	NA	NA	NA	NA	NA	NA	NA	NA	No
3	351.5	20	0.3125	351.5	79	295-351.5	NA	1961	No
4	400	16	NA	400.1	57	230-237 290-316 367-376	NA	1965	No
5	460	16	0.375	396	77	134-146 255-270 368-375	40	1970	Yes
6	>322*	16	0.250	332	45	100-110 150-160 200-210 250-260 300-320	40	1978	No

NA = Not Available; *Data difficult to determine from well log

Potential Contaminant Sources and Land Use

The potential contaminant sources and land use within the delineated zones of water contribution are assessed to determine each well's susceptibility. When agriculture is the predominant land use in the area, this may increase the likelihood of agricultural wastewater infiltrating the ground water system. Agricultural land is counted as a source of leachable contaminants and points are assigned to this rating based on the percentage of agricultural land. The dominant land use for American Falls is irrigated cropland. The land use within the immediate area of the wellheads is predominantly urban.

In terms of potential contaminant sources and land use susceptibility the ratings are as follows: For IOCs (i.e., nitrates), Well #1, Well #3, Well #4 and Well #5 rated moderate, and Well #6 rated high. For VOCS (i.e., petroleum-related products), Well #1, Well #3 and Well#4 rated moderate, Well #5 and Well #6 rated high. For SOCs (i.e. pesticides), Well #3, Well #4 and Well #5 rated moderate, while Well #1 and Well #6 rated high. Also for microbial contaminants (i.e., fecal coliform), Well #3 and Well #4 were rated low, and Well #1, Well #5 and Well #6 were moderate. Refer to Table 7 for summary of susceptibility evaluation, and to figures 2, 3, 4, 5, and 6 for well locations, delineated time of travel zones, and locations of potential contaminants.

Final Susceptibility Ranking

A detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria will automatically give a high susceptibility rating for the final well ranking despite land use because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0 to 3-year time of travel zone (Zone 1B) and a large percentage of agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, Well #1 was rated high for IOC, VOC, SOC, and microbial contamination. Well #3, Well #4, Well #5 rated moderate for IOC, VOC, SOC, and microbial contamination. Well #6 rated high for IOC, VOC, SOC, and moderate for microbial contamination (Table 7). These ratings reflect the system construction, hydrologic sensitivity, potential contaminants inventory and land use within the delineated source water assessment areas for the drinking water wells.

Susceptibility Summary

Antimony, arsenic, barium, cadmium, chromium, cyanide, lead, fluoride, mercury, nitrate, selenium, sulfate, sodium, and thallium represent the water chemistry history for the City of American Falls public water system. The reported concentrations of these chemicals in the drinking water were below the MCL for each chemical with the exception of thallium detected in Well #1 at 0.003 mg/l (MCL is 0.002 mg/l) in June 1995. Our records indicate for the City of American Falls public water system there have been no detections of VOCs or SOCs.

The county level agriculture-chemical use is considered high in this area due to a significant amount of agricultural land. Although there may only be a small portion agriculture land in the direct vicinity of the wells, it is useful as a tool in determining the overall chemical usage such as pesticides and how they may impact ground water through infiltration and surface water runoff. In addition, there were potential sources of contamination found within the wells delineated time of travel zones (Figures 2, 3, 4, 5, 6).

Table 7. Summary of American Falls Susceptibility Evaluation

Well	**Susceptibility Scores [1]**									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1	H	M	M	H	M	M	H	H	H	H
Well #3	M	M	M	M	L	M	M	M	M	M
Well #4	M	M	M	M	L	M	M	M	M	M
Well #5	H	M	H	M	M	M	M	M	M	M
Well #6	H	H	H	H	M	M	H	H	H	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility; IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

A source water protection program is tailored to the particular source water area. A community with a fully developed source water protection program will incorporate many strategies. For the City of American Falls, source water protection activities should focus on implementation of practices aimed at protecting the area near the wells and continue maintaining the overall integrity of the water system. If contaminants are detected in the system at or above their MCL, the City of American Falls should take appropriate measures to treat the water source. Treatments, such as a disinfectant and filtration for microbials, and reverse osmosis for IOCs, should be investigated to remedy these problems.

The City of American Falls should focus on keeping open dialogue with local businesses and document potential IOCs, VOCs, SOCs, or microbial contaminants. Any spills from the multiple potential contaminant sources in the delineated capture zones should be monitored carefully to prevent contaminants from infiltrating the ground water. Source water protection goes well beyond the jurisdiction of American Falls. Establishing partnerships with state and local agencies, commercial and industrial groups are important to protect the municipality's sole drinking water source. Also, public education about source water will further assist the city in its monitoring and protection efforts. Continued vigilance in keeping the wells protected from surface flooding can also keep the potential for contamination reduced. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the Power County Soil Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Pocatello Regional DEQ Office (208) 236-6160

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, Idaho Rural Water Association, at 208–343–7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as "Superfund" is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

References Cited

Drinking Water Information Management System (DWIMS). Idaho Department of Environmental Quality.

Great Lakes Upper Mississippi River Board of Station and Provincial Public Health and Environmental Managers, 1997. Recommended Standards for Water Works.

Idaho Division of Environmental Quality Ground Water Program, October 1999. Idaho Source Water Assessment Plan.

Idaho Division of Environmental Quality Drinking Water Program, May 21, 1999. City of American Falls System Sanitary Survey: PWS #6390019, Power County.

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Washington Group International, Inc, March 2001. Source Area Delineation Report American Falls Valley Hydrologic Province.

Attachment A

City of American Falls

Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : AMERICAN FALLS CITY OF Well# : WELL #1

Public Water System Number 6390001 09/19/2001 4:19:57 PM

1. System Construction		SCORE				
Drill Date	unknown					
Driller Log Available	NO					
Sanitary Survey (if yes, indicate date of last survey)	YES	2000				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		6				
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score	
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2	
Farm chemical use high	YES	0	0	2		
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	YES	NO	NO	NO	
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	4	2	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	15	28	28	4	
(Score = # Sources X 2) 8 Points Maximum		8	8	8	8	
Sources of Class II or III leacheable contaminants or	YES	3	15	5		
4 Points Maximum		3	4	4		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	25 to 50% Irrigated Agricultural Land	2	2	2	2	
Total Potential Contaminant Source / Land Use Score - Zone 1B		13	14	14	10	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	2	2		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	NO	0	0	0		
Sources of Class II or III leacheable contaminants or	NO	0	0	0		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0	
Cumulative Potential Contaminant / Land Use Score		18	19	21	12	
4. Final Susceptibility Source Score		14	14	14	14	
5. Final Well Ranking		High	High	High	High	

Ground Water Susceptibility Report Public Water System Name : AMERICAN FALLS CITY OF Well# : WELL #3

Public Water System Number 6390001 09/19/2001 4:19:57 PM

1. System Construction		SCORE				
Drill Date		04/08/1961				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		NO	0			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		YES	0			
	Total Hydrologic Score		3			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND		2	2	2	2
Farm chemical use high	YES		0	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	4	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		9	15	15	1
(Score = # Sources X 2) 8 Points Maximum			8	8	8	2
Sources of Class II or III leacheable contaminants or	YES		1	9	2	
4 Points Maximum			1	4	2	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B			9	12	10	2
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Land Use Zone II	25 to 50% Irrigated Agricultural Land		1	1	1	
Potential Contaminant Source / Land Use Score - Zone II			4	4	4	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	NO		0	0	0	
Sources of Class II or III leacheable contaminants or	NO		0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			0	0	0	0
Cumulative Potential Contaminant / Land Use Score			15	18	18	4
4. Final Susceptibility Source Score			9	10	10	8
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : AMERICAN FALLS CITY OF Well# : WELL #4

Public Water System Number 6390001 09/19/2001 4:19:57 PM

1. System Construction		SCORE				
Drill Date		06/23/1965				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		NO	1			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		4			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		NO	0			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		YES	0			
	Total Hydrologic Score		3			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND		2	2	2	2
Farm chemical use high	YES		0	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	4	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		2	8	8	2
(Score = # Sources X 2) 8 Points Maximum			4	8	8	4
Sources of Class II or III leacheable contaminants or	YES		4	7	2	
4 Points Maximum			4	4	2	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land		2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B			10	14	12	6
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		0	2	2	
Sources of Class II or III leacheable contaminants or	NO		0	0	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
Potential Contaminant Source / Land Use Score - Zone II			0	2	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	NO		0	0	0	
Sources of Class II or III leacheable contaminants or	NO		0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			0	0	0	0
Cumulative Potential Contaminant / Land Use Score			12	18	18	8
4. Final Susceptibility Source Score			9	11	11	10
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : AMERICAN FALLS CITY OF Well# : WELL #5

Public Water System Number 6390001 09/19/2001 4:19:57 PM

1. System Construction		SCORE				
Drill Date		09/10/1970				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		YES	0			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		2			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		NO	0			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		5			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high		YES	0	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	4	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	17	51	53	5
(Score = # Sources X 2) 8 Points Maximum			8	8	8	8
Sources of Class II or III leacheable contaminants or		YES	3	24	1	
4 Points Maximum			3	4	1	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land		2	2	2	2
	Total Potential Contaminant Source / Land Use Score - Zone 1B		13	14	11	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land		1	1	1	
	Potential Contaminant Source / Land Use Score - Zone II		4	4	3	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	0	1	1	
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		0	2	1	0
Cumulative Potential Contaminant / Land Use Score			19	22	19	12
4. Final Susceptibility Source Score			11	11	11	11
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : AMERICAN FALLS CITY OF Well# : WELL #6

Public Water System Number 6390001 09/19/2001 4:19:57 PM

1. System Construction		SCORE				
Drill Date		10/02/1978				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		NO	0			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		5			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND		2	2	2	2
Farm chemical use high		YES	0	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	4	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	4	16	17	3
(Score = # Sources X 2) 8 Points Maximum			8	8	8	6
Sources of Class II or III leacheable contaminants or		YES	6	8	2	
4 Points Maximum			4	4	2	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B		16	16	14	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II		5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of		YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III		3	3	3	0
Cumulative Potential Contaminant / Land Use Score			26	26	26	12
4. Final Susceptibility Source Score			13	13	13	12
5. Final Well Ranking			High	High	High	Moderate